QUALITY CONTROL REPORTS FOR

WET MIX MACADAM (WMM)

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.07/RSCN/WMM/Gradation/2014-15 02.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Mr. Ram Singh Chandra Naik,** Contractor, Bangalore.

Name of Work : Improvement to Roads, Drains and Asphalting to Roads in Venkategowda Layout Kempapura 1st Main in Ward No.07, Byatarayanapura, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **9570**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.4	96.6	95-100
22.4	2450	2775	29.0	71.0	60-80
11.2	1875	4650	48.6	51.4	40-60
4.75	2160	6810	71.2	28.8	25-40
2.36	925	7735	80.8	19.2	15-30
0.600	810	8545	89.3	10.7	8-22
0.075	785	9330	97.5	2.5	0-8

Civil-Tech Consultants & Engineers Bangalore

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Reference : EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **8675**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	275	275	3.2	96.8	95-100
22.4	2360	2635	30.4	69.6	60-80
11.2	1845	4480	51.6	48.4	40-60
4.75	1350	5830	67.2	32.8	25-40
2.36	975	6805	78.4	21.6	15-30
0.600	840	7645	88.1	11.9	8-22
0.075	755	8400	96.8	3.2	0-8

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Reference : EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **8600**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	305	305	3.5	96.5	95-100
22.4	2240	2545	29.6	70.4	60-80
11.2	1745	4290	49.9	50.1	40-60
4.75	1460	5750	66.9	33.1	25-40
2.36	925	6675	77.6	22.4	15-30
0.600	780	7455	86.7	13.3	8-22
0.075	815	8270	96.2	3.8	0-8

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Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8905**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	280	280	3.1	96.9	95-100
22.4	2230	2510	28.2	71.8	60-80
11.2	1945	4455	50.0	50.0	40-60
4.75	1540	5995	67.3	32.7	25-40
2.36	915	6910	77.6	22.4	15-30
0.600	755	7665	86.1	13.9	8-22
0.075	790	8455	94.9	5.1	0-8

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Reference : EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **9150**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	295	295	3.2	96.8	95-100
22.4	2565	2860	31.3	68.7	60-80
11.2	1840	4700	51.4	48.6	40-60
4.75	1430	6130	67.0	33.0	25-40
2.36	955	7085	77.4	22.6	15-30
0.600	780	7865	86.0	14.0	8-22
0.075	815	8680	94.9	5.1	0-8

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Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **8691**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	320	320	3.7	96.3	95-100
22.4	2586	2906	33.4	66.6	60-80
11.2	1475	4381	50.4	49.6	40-60
4.75	1360	5741	66.1	33.9	25-40
2.36	915	6656	76.6	23.4	15-30
0.600	845	7501	86.3	13.7	8-22
0.075	820	8321	95.7	4.3	0-8

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02.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. Ram Singh Chandra Naik,** Contractor, Bangalore.
Name of the Work	Improvement to Roads, Drains and Asphalting to Roads in Venkategowda Layout Kempapura 1st Main in Ward No.07, Byatarayanapura, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	388	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	89	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	298	
4	Aggregate Impact value = percent fines	22.94	22.60	
	100* (W_2/W_1)%			22.77

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Aggregate Impact Value

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Reference	EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	390	389	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	304	304	
4	Aggregate Impact value = percent fines	22.05	21.85	
	100* (W_2/W_1)%			**21.95**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Aggregate Impact Value

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Reference	EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	87	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	302	
4	Aggregate Impact value = percent fines	22.37	21.96	
	100* (W_2/W_1)%			22.16

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. Ram Singh Chandra Naik,** Contractor, Bangalore.
Name of Work	Improvement to Roads, Drains and Asphalting to Roads in Venkategowda Layout Kempapura 1st Main in Ward No.07, Byatarayanapura, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-TND/162/2013-14 Dated: 09.10.2013
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Result : Flakiness Index = **11.58%**

Elongation Index = **13.63%**

Result : Combined Flakiness & Elongation index 25.21%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Result : Flakiness Index = **12.69%**

Elongation Index = **13.85%**

Result : Combined Flakiness & Elongation index 26.54%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.47%**

Elongation Index = **13.82%**

Result : Combined Flakiness & Elongation index 25.29%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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